Poster II-21

Clinical Content Management Technology: Supporting Collaborative Research and Education
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The Vivalog Content Management Framework (VCMF) is a new programming toolkit that supports the creation of custom web-based applications that enable clinicians and researchers to collaboratively transform clinical data and images into shared repositories of structured knowledge. We have employed the VCMF to create MyPACS (http://MyPACS.net), a teaching file management system in use by thousands of radiologists around the world to create a growing repository of educational cases. We are now using the VCMF to begin the development of BioSCRIBE, a toolkit that will help researchers overcome barriers to collaborative research by providing the following capabilities in a unified framework:

- **A rapid application development toolkit** for easily constructing a set of user-friendly web-based reporting forms that are custom-tailored for each research project, allowing collaborating scientists and clinicians to submit data, report findings, and upload files from multiple institutions, regardless of geographic location.
- **A scalable repository** for storing data and files of any type, including acquired images, structured reports, processed data sets, statistical results, and visualizations. The schemas in the repository will be based on templates designed by the researchers, and will be fully customizable for representing the attributes and relationships of the project's unique data requirements.
- **A connectivity toolkit** for easily acquiring data from clinical systems, including DICOM-compliant PACS or modalities, and HL7-compliant EMRs.
- **A workflow management system** that expedites data acquisition and processing through streamlined coordination of work steps, including the automated execution of sequential transformations, and an alert system that sends email to project members when their interaction is required.
- **A secure, intuitive, web-based experiment subject navigator,** allowing researchers to navigate through hierarchical data structures, generate reports, pose ad-hoc queries, and retrieve multimedia files from any authenticated web browser.
- **A web-based policy manager** that enables project leaders to selectively control access to data and files at a fine granularity, on a subject-by-subject and user-by-user basis, and to create custom reports showing different views over the data for different users and in different contexts.
- **An integrated web-based ontology manager** for importing or editing hierarchical structured vocabularies, which then are automatically integrated into the user interfaces for reporting, annotating, querying, disseminating, and navigating experiment data.